FCC Test Report

APPLICANT	:	BlackBerry Limited
EQUIPMENT	:	Smartphone
BRAND NAME	:	BlackBerry
MODEL NAME	:	RHH151LW
MARKETING NAME	:	SQC100-1
FCC ID	:	L6ARHH150LW
STANDARD	:	FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION	:	Certification

The product was received on Jul. 15, 2014 and testing was completed on Sep. 03, 2014. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2009 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Louis Wu

Reviewed by: Louis Wu / Manager

Jones Tsai

Approved by: Jones Tsai / Manager

Testing Laboratory 1190

SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC471502	Rev. 01	Initial issue of report	Oct. 31, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 6.50 dB at 0.158 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 8.84 dB at 216.800 MHz for Quasi-Peak

1. General Description

1.1. Applicant

BlackBerry Limited
2300 University Street East, Waterloo, ON., CAN, N2K1A0

1.2. Manufacturer

FIH Mobile Limited
No. 4, Mingsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Brand Name	BlackBerry
Model Name	RHH151LW
Marketing Name	SQC100-1
FCC ID	L6ARHH150LW
IMEI Code	004401139971853
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/NFC WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 Bluetooth v4.0 EDR/LE
HW Version	PVT 2
SW Version	BlackBerry 10.3.1.565/566
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4. Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	GSM850 : 824.2 MHz ~ 848.8 MHz GSM1900 : 1850.2 MHz ~ 1909.8MHz WCDMA Band V : 826.4 MHz ~ 846.6 MHz WCDMA Band II : 1852.4 MHz ~ 1907.6 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz ; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Rx Frequency	GSM850 : 869.2 MHz ~ 893.8 MHz GSM1900 : 1930.2 MHz ~ 1989.8 MHz WCDMA Band V : 871.4 MHz ~ 891.6 MHz WCDMA Band II : 1932.4 MHz ~ 1987.6 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz ; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz NFC : 13.56 MHz
Antenna Type	WWAN : Coupling type (LDS) Antenna LTE : PIFA Antenna WLAN : PIFA Antenna Bluetooth : FPC Antenna NFC : Loop Antenna GPS: PIFA Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) LTE: QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : π/4-DQPSK Bluetooth (3Mbps) : 8-DPSK GPS : BPSK NFC: ASK

1.5. Modification of EUT

No modifications are made to the EUT during all test items.

1.6. Test Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation TW1022 (OS02-LK : TW1023) under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	**Sporton Site No.**	
	CO05-HY	03CH06-HY

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C. TEL: +886-2-2603-5367 / +886-2-2601-1640 FAX: +886-2-2601-1695	
Test Site No.	**Sporton Site No.**	**FCC Registration No.**
	OS02-LK	TW1023

1.7. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2009

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2009 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

Item	EUT Configuration	Test Condition		
		EMI AC	EMI RE<1G	EMI RE≥1G
1.	Charging Mode (EUT with adapter)	☒	☒	☒
2.	Data application transferred mode (EUT connected with notebook)	☒	☒	Note 1

Abbreviations:

- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

Note 1: Testing for this mode is not required or not the worst case.

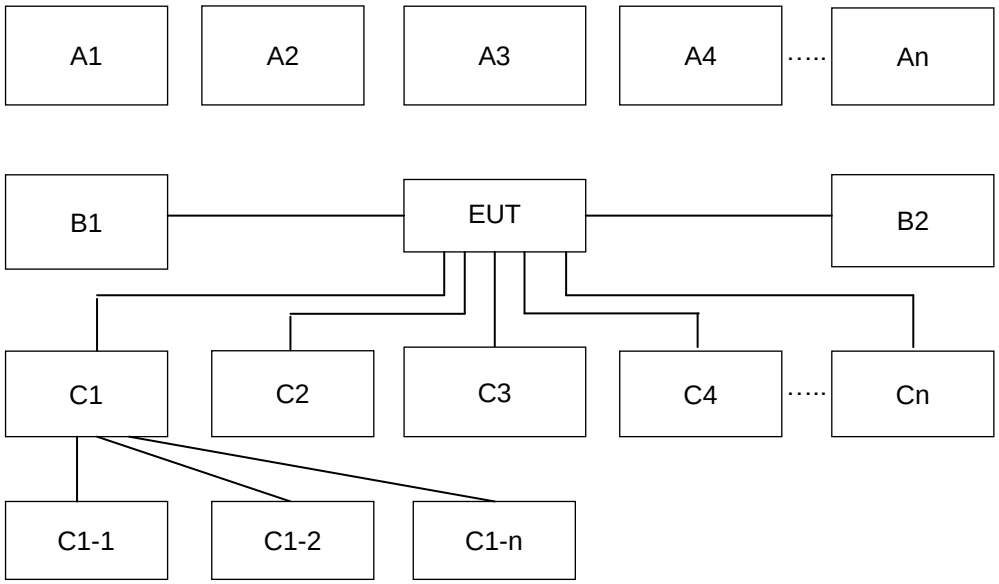
Remark: For signal above 1GHz, the worst case was test item 1.

Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1/2	Mode 1 : GSM850 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + Earphone 1 + NFC On + USB Cable 1 (Charging from Adapter 1) Mode 2 : WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + MPEG4 + USB Cable 2 (Charging from Adapter 2) Mode 3 : LTE Band 7 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + Earphone 3 + Camera + USB Cable 1 (Charging from Adapter 1) Mode 4 : WCDMA Band II Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 1 + GPS Rx + USB Cable 2 (Data Link with Notebook) Mode 5 : WCDMA Band II Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 1 + FM Rx + USB Cable 2 (Data Link with Notebook)
Radiated Emissions < 1GHz	1/2	Mode 1 : GSM850 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + Earphone 1 + NFC On + USB Cable 1 (Charging from Adapter 1) Mode 2 : WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + MPEG4 + USB Cable 2 (Charging from Adapter 2) Mode 3 : LTE Band 7 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + Earphone 3 + Camera + USB Cable 1 (Charging from Adapter 1) Mode 4 : WCDMA Band II Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 1 + GPS Rx + USB Cable 2 (Data Link with Notebook) Mode 5 : WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + FM Rx + USB Cable 2 (Charging from Adapter 2)
Radiated Emissions ≥ 1GHz	1	Mode 1 : WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + MPEG4 + USB Cable 2 (Charging from Adapter 2)

Remark:

1. The worst case of AC is mode 4; only the test data of this mode was reported.
2. The worst case of RE < 1G is mode 2; only the test data of this mode was reported.
3. Data Link with Notebook means data application transferred mode between EUT and Notebook.

2.2. Connection Diagram of Test System



Conduction Test Setup									
No.	**Wireless Station**	**Connection Type**	**Test Mode**						
			1	**2**	**3**	**4**	**5**	**-**	**-**
A1	BT Earphone	Bluetooth	**X**	**X**	**X**	**X**	**X**		
A2	System Simulator	GSM/UMTS/CDMA/ WCDMA/LTE	**X**	**X**	**X**	**X**	**X**		
A3	GPS Station	GPS				**X**			
A4	AP router	WiFi	**X**	**X**	**X**	**X**	**X**		
No.	**Power Source**	**Connection Type**	**1**	**2**	**3**	**4**	**-**	**-**	**-**
B1	AC : 120V/60Hz	AC Power Cable	**X**	**X**	**X**				
No.	**Setup Peripherals**	**Connection Type**	**1**	**2**	**3**	**4**	**-**	**-**	**-**
C1	Notebook	USB cable				**X**	**X**		
C1-1	AP router	RJ-45 Cable to C1				**X**	**X**		
C1-2	IPod	USB Cable to C1				**X**	**X**		
C2	Earphone	Earphone jack	**X**	**X**	**X**	**X**	**X**		
C3	SD card	SD I/O interface without cable	**X**	**X**	**X**	**X**	**X**		

Radiation Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	2	3	4	5	-	-
A1	BT Earphone	Bluetooth	X	X	X	X	X		
A2	System Simulator	GSM/UMTS/CDMA/ WCDMA/LTE	X	X	X	X	X		
A3	GPS Station	GPS				X			
A4	AP router	WiFi	X	X	X	X	X		
No.	**Power Source**	**Connection Type**	**1**	**2**	**3**	**4**	**-**	**-**	**-**
B1	AC : 120V/60Hz	AC Power Cable	X	X	X		X		
No.	**Setup Peripherals**	**Connection Type**	**1**	**2**	**3**	**4**	**-**	**-**	**-**
C1	Notebook	USB cable				X			
C1-1	AP router	RJ-45 Cable to C1				X			
C1-2	IPod	USB Cable to C1				X			
C2	Earphone	Earphone jack	X	X	X	X	X		
C3	SD card	SD I/O interface without cable	X	X	X	X	X		

2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	R&S	CMW 500	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
4.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
5.	WLAN AP	D-Link	DIR-865L	KA2IR865LA1	N/A	Unshielded, 1.8 m
6.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
7.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
8.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
9.	iPod	Apple	A1199	FCC DoC	Shielded, 1.0 m	N/A
10.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.4. EUT Operation Test Setup

The EUT was in GSM or WCDMA or LTE idle mode during the testing. The EUT was synchronized to the BCCH, and was in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Data application is transferred between Laptop and EUT via USB cable.
2. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
3. Execute "Windows Media Player" to play MPEG4 files.
4. Turn on camera to capture images.

3. Test Result

3.1. Test of AC Conducted Emission Measurement

3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

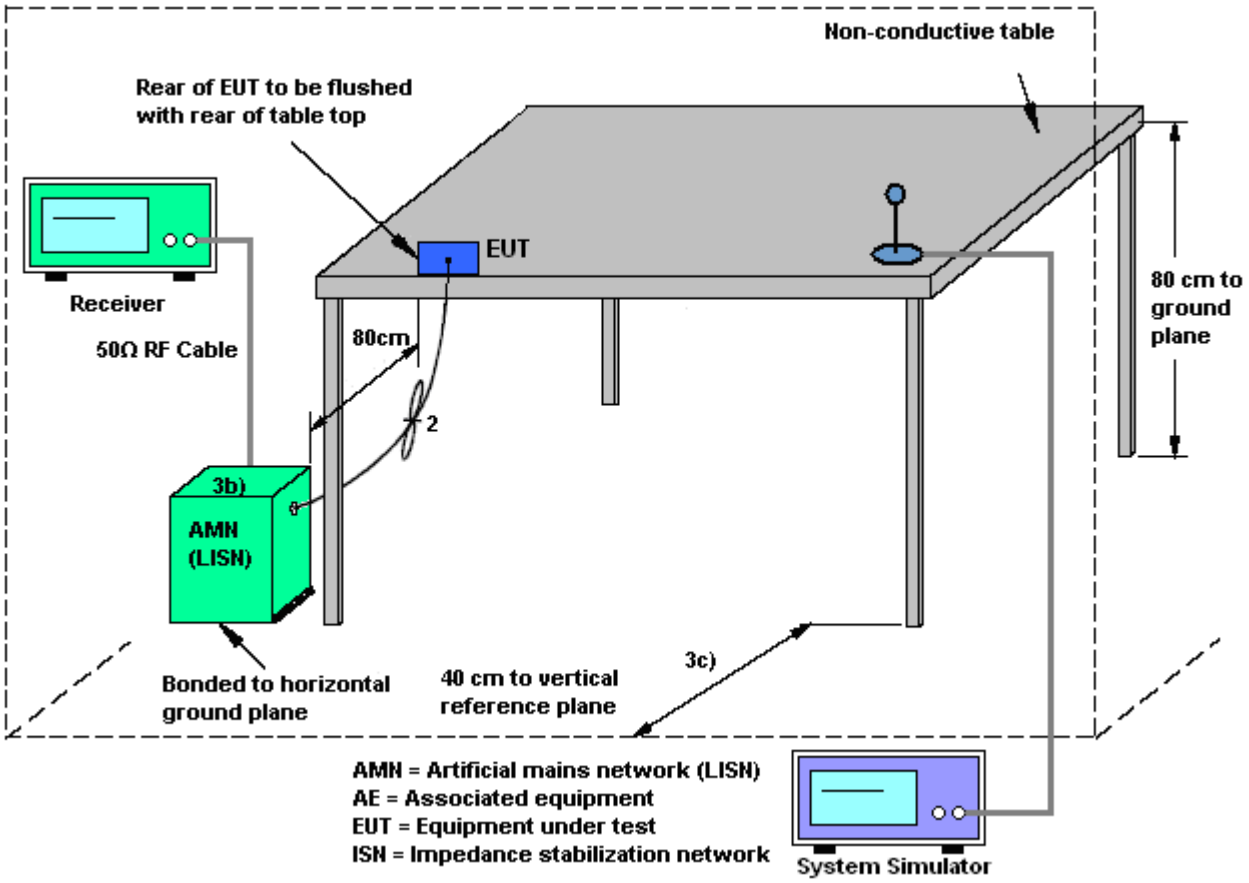
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedure

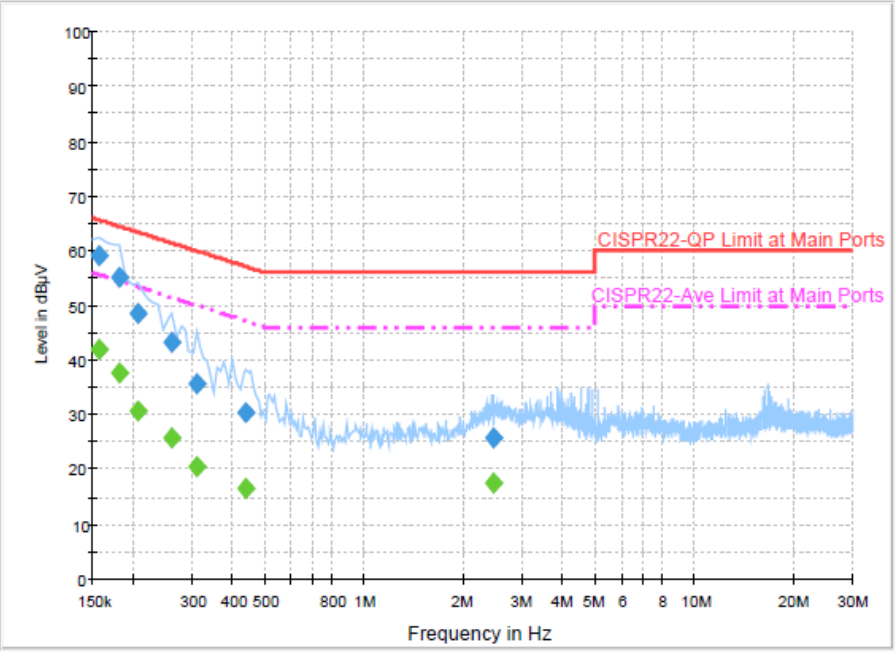
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.1.4 Test Setup



3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 4	**Temperature :**	20~22℃
Test Engineer :	Kai-Chun Chu	**Relative Humidity :**	46~48%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	WCDMA Band II Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 1 + GPS Rx + USB Cable 2 (Data Link with Notebook)		



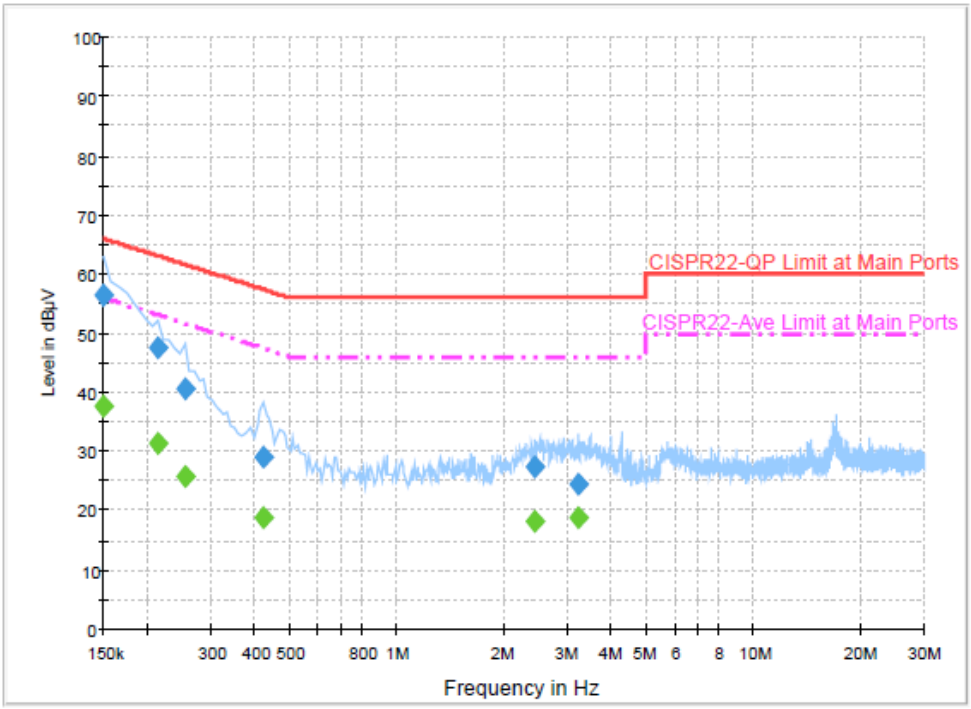
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	59.1	Off	L1	19.3	6.5	65.6
0.182000	55.2	Off	L1	19.3	9.2	64.4
0.206000	48.5	Off	L1	19.3	14.9	63.4
0.262000	43.2	Off	L1	19.4	18.2	61.4
0.310000	35.8	Off	L1	19.3	24.2	60.0
0.438000	30.2	Off	L1	19.4	26.9	57.1
2.462000	25.8	Off	L1	19.6	30.2	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	41.8	Off	L1	19.3	13.8	55.6
0.182000	37.5	Off	L1	19.3	16.9	54.4
0.206000	30.6	Off	L1	19.3	22.8	53.4
0.262000	25.7	Off	L1	19.4	25.7	51.4
0.310000	20.3	Off	L1	19.3	29.7	50.0
0.438000	16.5	Off	L1	19.4	30.6	47.1
2.462000	17.3	Off	L1	19.6	28.7	46.0

Test Mode :	Mode 4	Temperature :	20~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	46~48%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band II Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 1 + GPS Rx + USB Cable 2 (Data Link with Notebook)		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	56.4	Off	N	19.4	9.6	66.0
0.214000	47.5	Off	N	19.3	15.5	63.0
0.254000	40.5	Off	N	19.4	21.1	61.6
0.422000	29.2	Off	N	19.4	28.2	57.4
2.438000	27.3	Off	N	19.6	28.7	56.0
3.222000	24.5	Off	N	19.6	31.5	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	37.7	Off	N	19.4	18.3	56.0
0.214000	31.3	Off	N	19.3	21.7	53.0
0.254000	25.9	Off	N	19.4	25.7	51.6
0.422000	18.9	Off	N	19.4	28.5	47.4
2.438000	18.1	Off	N	19.6	27.9	46.0
3.222000	18.8	Off	N	19.6	27.2	46.0

3.2. Test of Radiated Emission Measurement

3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

Note: Measurement below 1GHz follows the CISPR 22 limit line as below：

15.109 (g) As an alternative to the radiated emission limits shown in paragraphs (a) and (b) of this section, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, “Information Technology Equipment - Radio Disturbance Characteristics - Limits and Methods of Measurement”

Frequency (MHz)	Field Strength (dBuV/meter)	Measurement Distance (meters)
30 – 230	30	10
230 – 1000	37	10

3.2.2. Measuring Instruments

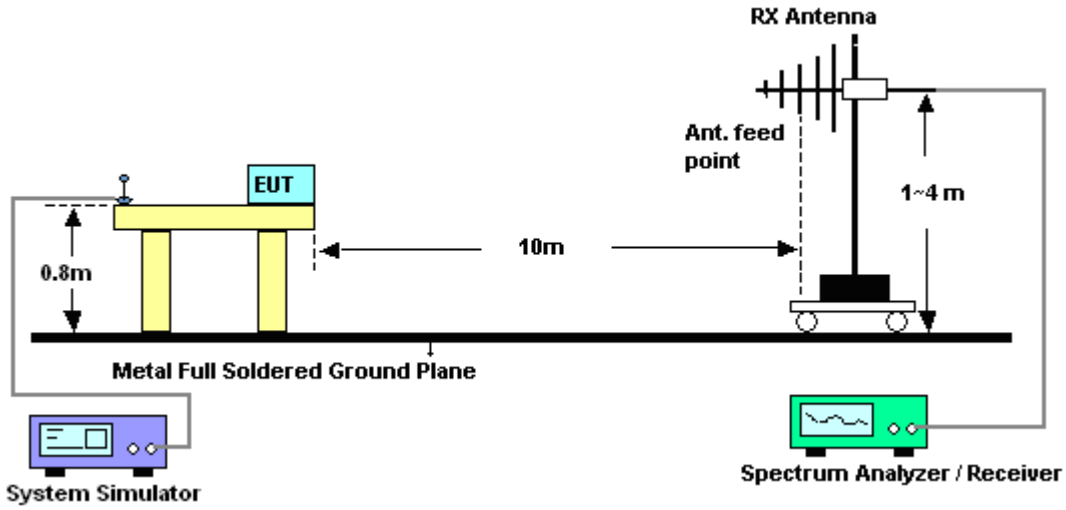
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

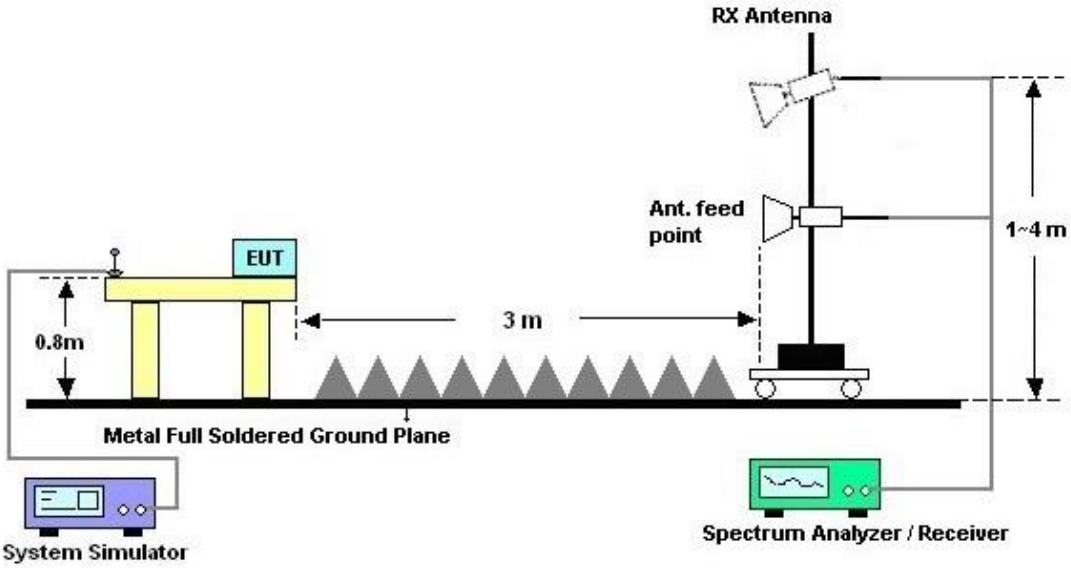
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 10 meters (30MHz~1GHz) and 3 meters (1GHz~ 13GHz) from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBμV/m) = 20 log Emission level (μV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



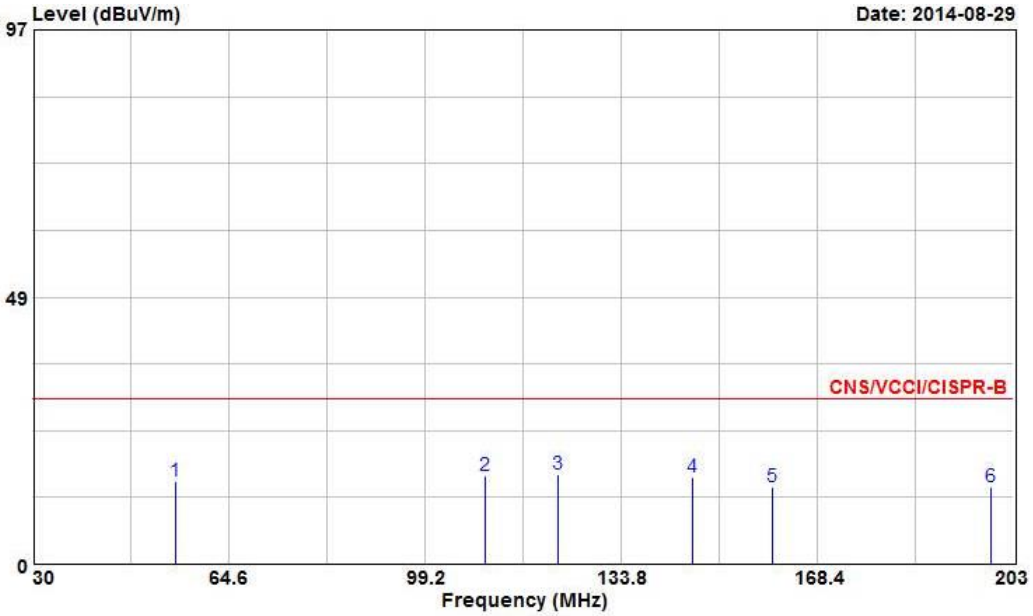
For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 2	**Temperature :**	20~23°C
Test Engineer :	Daniel Lee	**Relative Humidity :**	50~53%
Test Distance :	10m	**Polarization :**	Horizontal
Function Type :	WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + MPEG4 + USB Cable 2 (Charging from Adapter 2)		

■ Emission level (dBμV/m) = 20 log Emission level (μV/m)
■ Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
■ The test that passed at the minimum margin was marked by the frame in the following test record

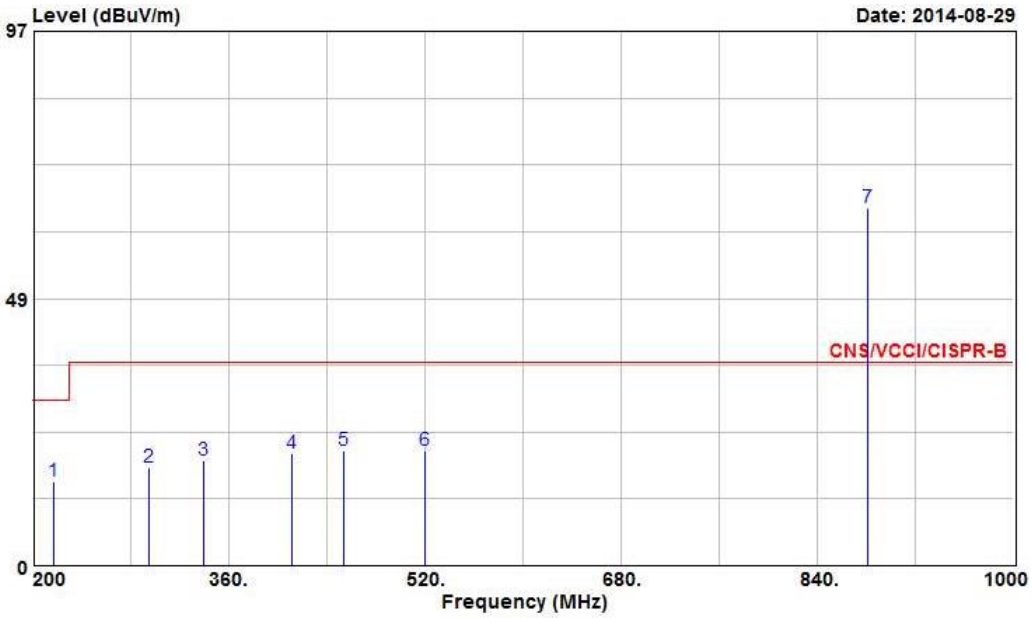


Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m HORIZONTAL
Project : 471502
Power : 120Vac/60Hz
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	55.260	14.97	-15.03	30.00	33.46	7.60	0.90	26.99	Peak	---	---
2	109.750	15.98	-14.02	30.00	29.90	11.70	1.20	26.82	Peak	---	---
3	122.730	16.20	-13.80	30.00	29.97	11.78	1.22	26.77	Peak	400	134
4	146.430	15.77	-14.23	30.00	30.57	10.55	1.33	26.68	Peak	---	---
5	160.440	14.09	-15.91	30.00	29.22	10.10	1.40	26.63	Peak	---	---
6	199.020	14.01	-15.99	30.00	29.44	9.45	1.60	26.48	Peak	---	---

Test Mode :	Mode 2	**Temperature :**	20~23°C
Test Engineer :	Daniel Lee	**Relative Humidity :**	50~53%
Test Distance :	10m	**Polarization :**	Horizontal
Function Type :	WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + MPEG4 + USB Cable 2 (Charging from Adapter 2)		
Remark :	#7 is system simulator signal which can be ignored.		

■ Emission level (dBμV/m) = 20 log Emission level (μV/m)
■ Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
■ The test that passed at the minimum margin was marked by the frame in the following test record

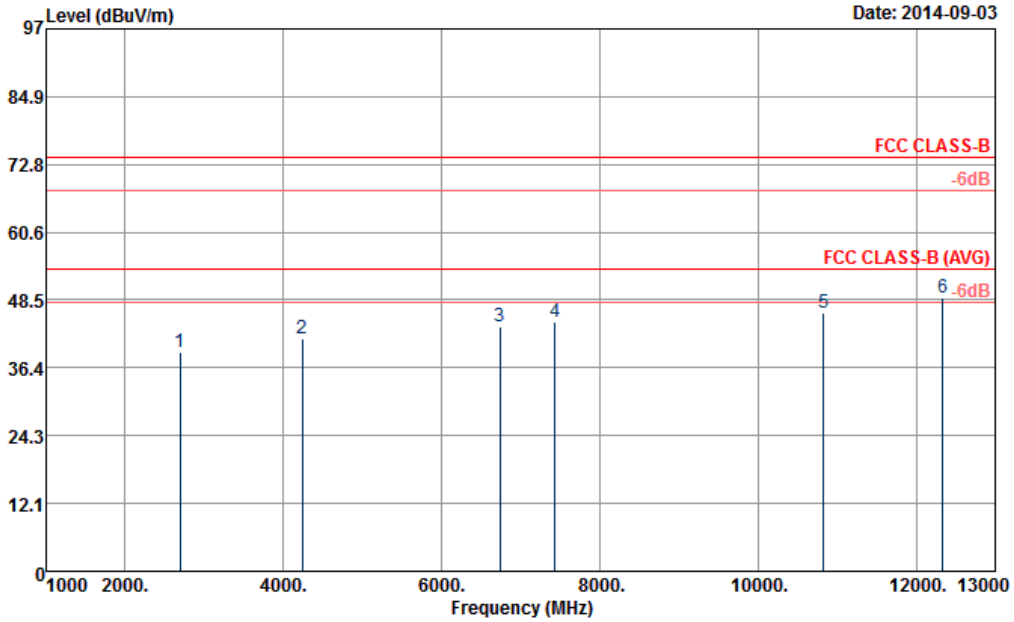


Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m HORIZONTAL
Project : 471502
Power : 120Vac/60Hz
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	216.800	15.30	-14.70	30.00	30.94	9.13	1.67	26.44	Peak	400	319
2	295.200	17.94	-19.06	37.00	29.12	13.15	1.98	26.31	Peak	---	---
3	339.200	19.16	-17.84	37.00	29.37	14.25	2.16	26.62	Peak	---	---
4	411.200	20.32	-16.68	37.00	28.96	16.11	2.42	27.17	Peak	---	---
5	453.600	21.01	-15.99	37.00	29.07	16.84	2.51	27.41	Peak	---	---
6	520.000	20.94	-16.06	37.00	28.12	17.85	2.68	27.71	Peak	---	---
7 X	881.400	64.84			68.26	20.52	3.53	27.47	Peak	---	---

Test Mode :	Mode 2	Temperature :	22~23°C
Test Engineer :	Hayden Wu	Relative Humidity :	44~46%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + MPEG4 + USB Cable 2 (Charging from Adapter 2)		

- Emission level (dBμV/m) = 20 log Emission level (μV/m)
- Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
- The test that passed at the minimum margin was marked by the frame in the following test record

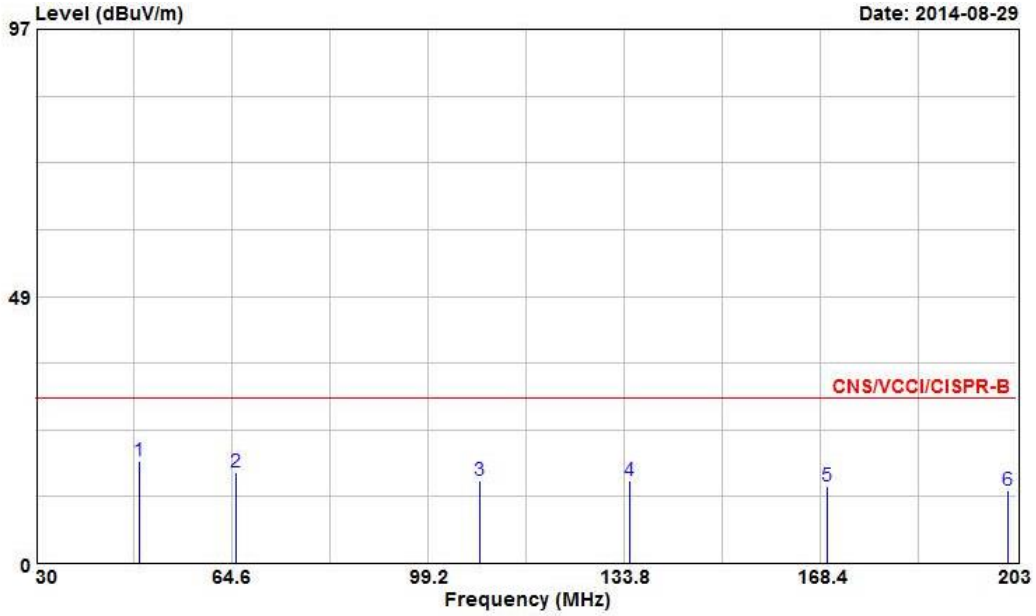


Site : 03CH06-HY
Condition : FCC CLASS-B 3m HF-ANT_583_140731 HORIZONTAL
Project : 471502
Power : 120Vac/60Hz
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2696.00	39.04	-34.96	74.00	60.89	32.32	6.53	60.70	---	---	Peak
2	4240.00	41.57	-32.43	74.00	60.71	33.75	8.76	61.65	---	---	Peak
3	6742.00	43.77	-30.23	74.00	58.51	35.80	9.91	60.45	---	---	Peak
4	7432.00	44.71	-29.29	74.00	57.56	35.71	12.01	60.57	---	---	Peak
5	10834.00	46.31	-27.69	74.00	54.71	37.60	13.58	59.58	---	---	Peak
6	12334.00	48.81	-25.19	74.00	53.73	39.14	15.43	59.49	100	259	Peak

Test Mode :	Mode 2	**Temperature :**	20~23°C
Test Engineer :	Daniel Lee	**Relative Humidity :**	50~53%
Test Distance :	10m	**Polarization :**	Vertical
Function Type :	WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + MPEG4 + USB Cable 2 (Charging from Adapter 2)		

■ Emission level (dBμV/m) = 20 log Emission level (μV/m)
■ Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
■ The test that passed at the minimum margin was marked by the frame in the following test record

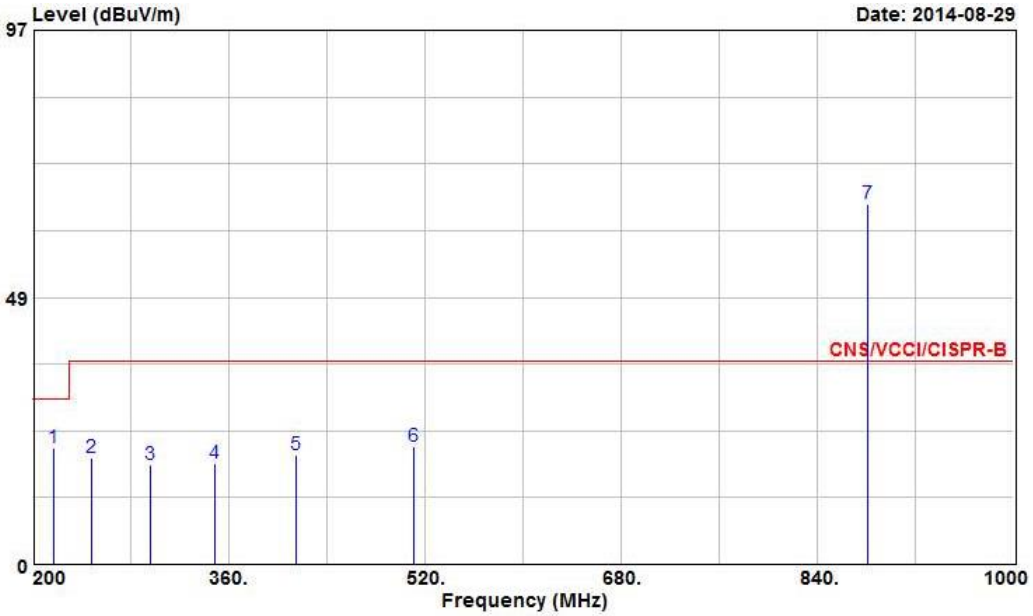


Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m VERTICAL
Project : 471502
Power : 120Vac/60Hz
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	48.340	18.60	-11.40	30.00	35.83	8.90	0.87	27.00	Peak	100	316
2	65.290	16.54	-13.46	30.00	35.80	6.70	1.00	26.96	Peak	---	---
3	108.370	15.04	-14.96	30.00	29.06	11.61	1.20	26.83	Peak	---	---
4	134.840	14.99	-15.01	30.00	29.19	11.25	1.27	26.72	Peak	---	---
5	169.610	13.96	-16.04	30.00	29.60	9.50	1.45	26.59	Peak	---	---
6	201.440	13.18	-16.82	30.00	28.59	9.45	1.61	26.47	Peak	---	---

Test Mode :	Mode 2	**Temperature :**	20~23°C
Test Engineer :	Daniel Lee	**Relative Humidity :**	50~53%
Test Distance :	10m	**Polarization :**	Vertical
Function Type :	WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + MPEG4 + USB Cable 2 (Charging from Adapter 2)		
Remark :	#7 is system simulator signal which can be ignored.		

■ Emission level (dBμV/m) = 20 log Emission level (μV/m)
■ Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
■ The test that passed at the minimum margin was marked by the frame in the following test record

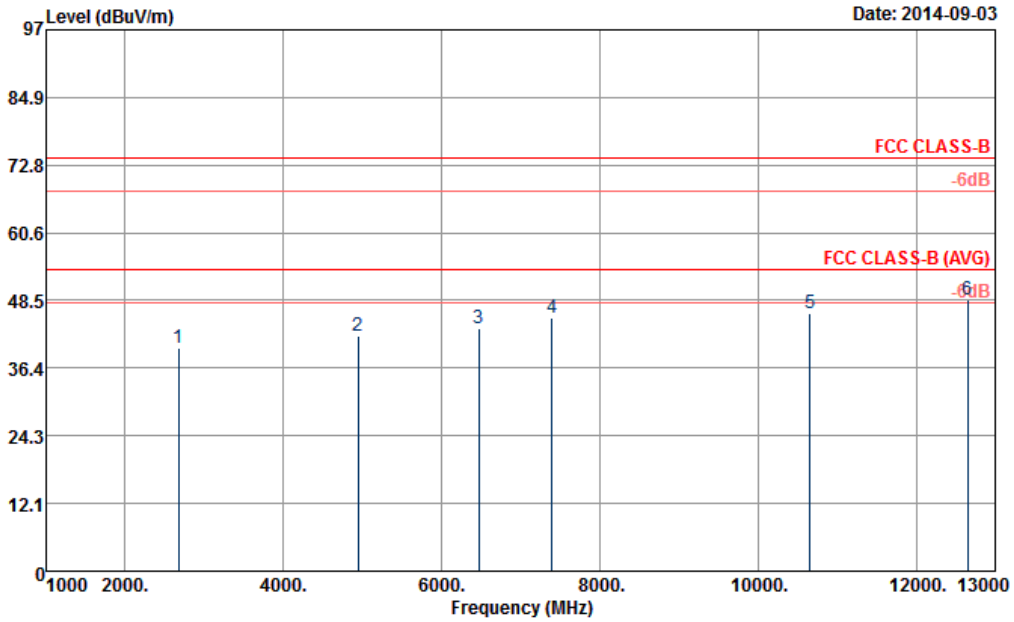


Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m VERTICAL
Project : 471502
Power : 120Vac/60Hz
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	216.800	21.16	-8.84	30.00	36.80	9.13	1.67	26.44	QP	100	332
2	248.000	19.25	-17.75	37.00	31.63	12.22	1.79	26.39	Peak	---	---
3	296.000	18.07	-18.93	37.00	29.22	13.18	1.98	26.31	Peak	---	---
4	348.800	18.40	-18.60	37.00	28.41	14.48	2.20	26.69	Peak	---	---
5	415.200	19.78	-17.22	37.00	28.36	16.18	2.43	27.19	Peak	---	---
6	511.200	21.35	-15.65	37.00	28.81	17.60	2.64	27.70	Peak	---	---
7 @	881.400	65.49			68.91	20.52	3.53	27.47	Peak	---	---

Test Mode :	Mode 2	Temperature :	22~23°C
Test Engineer :	Hayden Wu	Relative Humidity :	44~46%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WCDMA Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Earphone 2 + MPEG4 + USB Cable 2 (Charging from Adapter 2)		

■ Emission level (dBμV/m) = 20 log Emission level (μV/m)
■ Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
■ The test that passed at the minimum margin was marked by the frame in the following test record



Site : 03CH06-HY
Condition : FCC CLASS-B 3m HF-ANT_583_140731 VERTICAL
Project : 471502
Power : 120Vac/60Hz
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2674.00	39.95	-34.05	74.00	61.84	32.27	6.51	60.67	---	---	Peak
2	4942.00	42.21	-31.79	74.00	59.25	34.46	9.02	60.52	---	---	Peak
3	6474.00	43.59	-30.41	74.00	58.50	35.77	9.80	60.48	---	---	Peak
4	7400.00	45.27	-28.73	74.00	58.11	35.72	12.00	60.56	---	---	Peak
5	10660.00	46.24	-27.76	74.00	55.49	37.49	13.33	60.07	---	---	Peak
6	12654.00	48.71	-25.29	74.00	53.55	39.37	15.72	59.93	100	126	Peak

4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz ~ 2.75GHz	Nov. 15, 2013	Aug. 27, 2014~ Oct. 22, 2014	Nov. 14, 2014	Conduction (CO05-HY)
LISN (for auxiliary equipment)	Rohde & Schwarz	ENV216	100081	9kHz ~ 30MHz	Dec. 12, 2013	Aug. 27, 2014~ Oct. 22, 2014	Dec. 11, 2014	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz ~ 30MHz	Dec. 04, 2013	Aug. 27, 2014~ Oct. 22, 2014	Dec. 03, 2014	Conduction (CO05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Aug. 27, 2014~ Oct. 22, 2014	N/A	Conduction (CO05-HY)
Amplifier	HP	8447D	2944A09068	0.1MHz ~ 1.3GHz	Dec. 12, 2013	Aug. 29, 2014~ Oct. 23, 2014	Dec. 11, 2014	Radiation (OS03-LK)
Spectrum Analyzer	R&S	FSP 7	100642	9 kHz ~ 7 GHz	Mar. 06, 2014	Aug. 29, 2014~ Oct. 23, 2014	Mar. 05, 2015	Radiation (OS03-LK)
Test Receiver	R&S	ESCS 30	826547/017	9 kHz ~ 2.75 GHz	Dec. 06, 2013	Aug. 29, 2014~ Oct. 23, 2014	Dec. 05, 2014	Radiation (OS03-LK)
Bilog Antenna	SCHAFFNER	CBL6111C	2743	30 MHz ~ 1 GHz	Jul. 05, 2014	Aug. 29, 2014~ Oct. 23, 2014	Jul. 04, 2015	Radiation (OS03-LK)
Turn Table	EMCO	2080	9711-2021	0~360 degree	N/A	Aug. 29, 2014~ Oct. 23, 2014	N/A	Radiation (OS03-LK)
Antenna Mast	EMCO	2075	9711-2115	1 m~4 m	N/A	Aug. 29, 2014~ Oct. 23, 2014	N/A	Radiation (OS03-LK)
Spectrum Analyzer	R&S	FSP30	101067	9kHz ~ 30GHz	Nov. 20, 2013	Sep. 03, 2014	Nov. 19, 2014	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9kHz ~ 26.5GHz	Dec. 02, 2013	Sep. 03, 2014	Dec. 01, 2014	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Jul. 24, 2014	Sep. 03, 2014	Jul. 23, 2015	Radiation (03CH06-HY)
Preamplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 17, 2014	Sep. 03, 2014	Jul. 16, 2015	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 ~ 360 degree	N/A	Sep. 03, 2014	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1 m ~ 4 m	N/A	Sep. 03, 2014	N/A	Radiation (03CH06-HY)

5. Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.8**